Pecatonica River Bridge
Pecatonica River at Winneshiek Road
Freeport Vicinity
Stephenson County
Illinois

HAER No. IL-9

PHOTOGRAPHS

HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, D.C. 20240

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HISTORIC AMERICAN ENGINEERING RECORD

IL-9

PECATONICA RIVER BRIDGE

Date: 1879

Location: Spanning the Pecatonica River at Winnesheik Road, Harlem Township, Stephenson County, Illinois.

Owner: Harlem Township

Designer: Wrought Iron Bridge Co.

Significance: The Pecatonica River Bridge is the oldest remaining Pratt Truss Bridge of this type built by the Wrought Iron Bridge Co. of Canton Ohio.

Historian: William J. Keith, P.E. Sept. 1982

Transmitted by: Dan Clement, 1983

The Pecatonica River Bridge carrying Winnesheik Road traffic across the Pecatonica River is located in the heart of Harlem Township, Stephenson County, and the site is one of agriculture in general with the low-lying areas susceptible to spring floodings of the Pecatonica River.

In 1879 or thereabouts, the present bridge was constructed at the site over the Pecatonica River. It is unfortunate that no permanent records were preserved of this particular bridge as to the pertinent facts, people, places, and dates as to the order of events leading up to the climax of the new bridge being open for traffic.

The design chosen for the bridge over the Pecatonica River was one that was very commonly used during that period. Basically this design was used for spans of 80 to 150 feet in length. To give you some idea of the common use of this particular design, the State of Ohio had structures totaling 60,500 lineal feet, Indiana had 23,000 feet, Illinois had 32,100 feet, Michigan had 11,000 feet, Wisconsin had 1,200 feet, Minnesota had 6,700 feet, and Iowa had structures totaling 21,600 feet in length. This information was obtained from Mr. David A. Simmons, Historian and Manager, National Register Program, State of Ohio. All of these structures were constructed during a period of time from 1876 to 1885.

The bridge is of a design that had been patented in 1876 by The Wrought Iron Bridge Company of Canton, Ohio. The same company apparently built this structure at the site. The Pecatonica River Bridge at Winnesheik Road is a Pratt Through Truss design with the particular modifications that were unique to the Wrought Iron Bridge Company as stated in their patent of November 21, 1876. This bridge has a total of 8 panels for a total length of 112 feet center to center of end bearings. Of the panels, the two outside

panels were 13.35 feet and the interior panels were approximately 14.2 feet. The height of the structure is 17.05 feet. The clear width for the traveled way is 16.0 feet. The structure rests on stone abutments which in turn were built on concrete mud sills located below the water line. The floor system consists of exterior stringers being made up of a C beam which is 6" x 2" in dimensions. The deck itself is of the timber variety. The vertical members, diagonal members and cords utilized throughout this structure are made up of basically inch and a quarter bars in thickness and of various lengths with the other items being of makeups of various different angles riveted to plate steel or C members being riveted to flat stock steel to make a type of beam for extra strength. Some of the cords, diagonals and verticals were of the adjustable variety. The bar stock was threaded for adjustment to insure tightness and stability for the structure.

This design was very common during this early engineering time period and this structure I am sure, handled all of the traffic of that era very well, very expediantely. Most of the traffic during that time would be of horse and buggy and combination horse drawn wagons, the continuing down through the years to the beginning of the automobile era. As the industrial revolution came upon our country and refinements to the automobiles, trucks, etc., the equipment became larger and larger allowing heavier loads to be hauled, thereby, straining the structure more and more to its limit. Time and the elements took their toll on this structure as well.

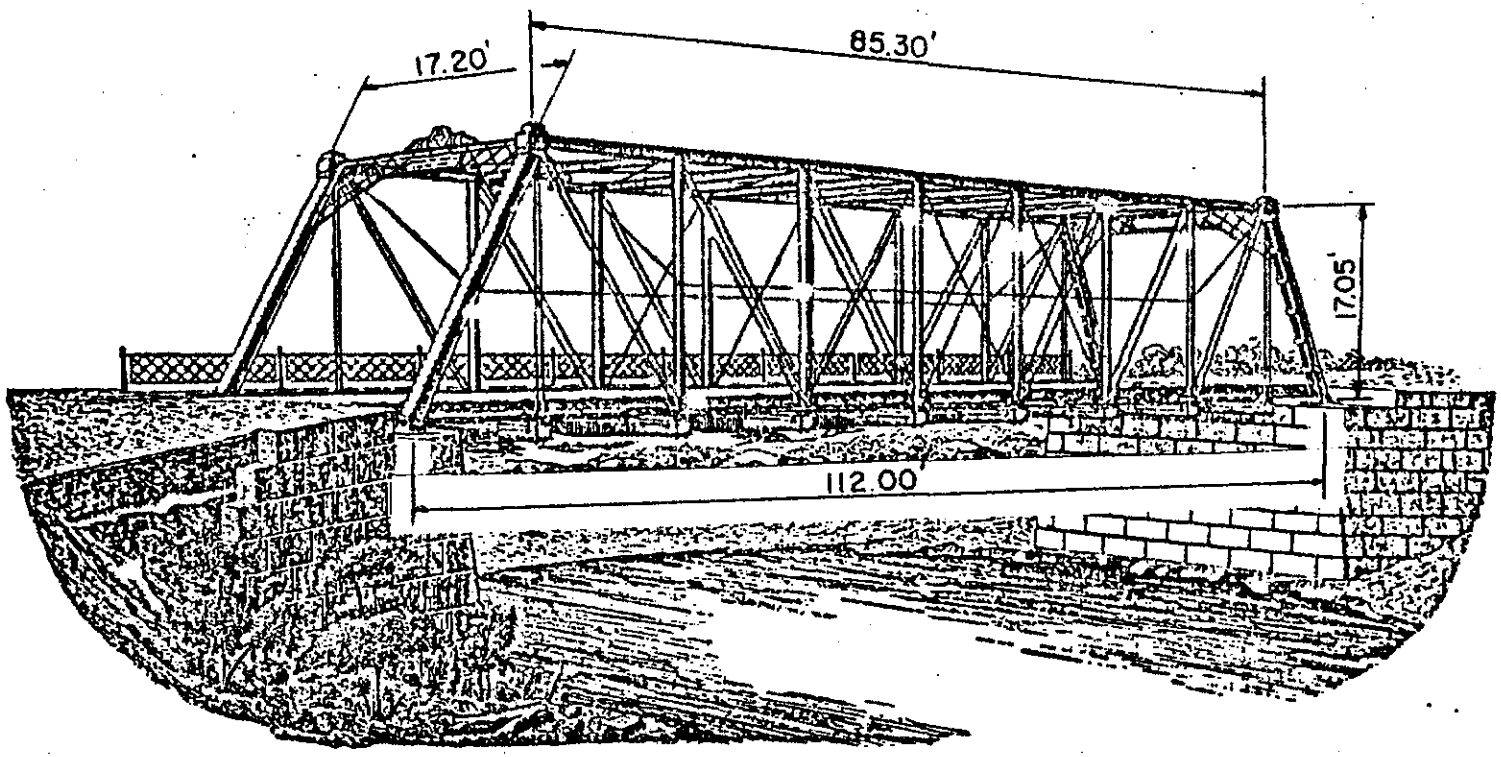
In 1975, an inspection was made in depth by the Department of Transportation, State of Illinois, according to records at the County Highway Department, and found that this particular structure required a 5-ton weight limit posting. The members had deteriorated to a sufficient degree that it was unable to carry any heavier loads.

Since 1975, it has further deteriorated to the point where a truck earlier this year, which was definately over the posted weight limit, broke through the northwest quadrant of the structure. Consequently, the facility had to be closed to all traffic. Up to that time, it was open for light vehicles such as cars and pickup trucks.

At this time, plans have been prepared for a new structure to be built just down stream of the existing facility but will require the removal of the old truss structure itself, as the waterway opening required is twice that allowed by the existing truss.

It should be noted that this structure has served this area very well from the date of being built in 1879 to present day. It has served a great number of years over the normal design period of 50 years.

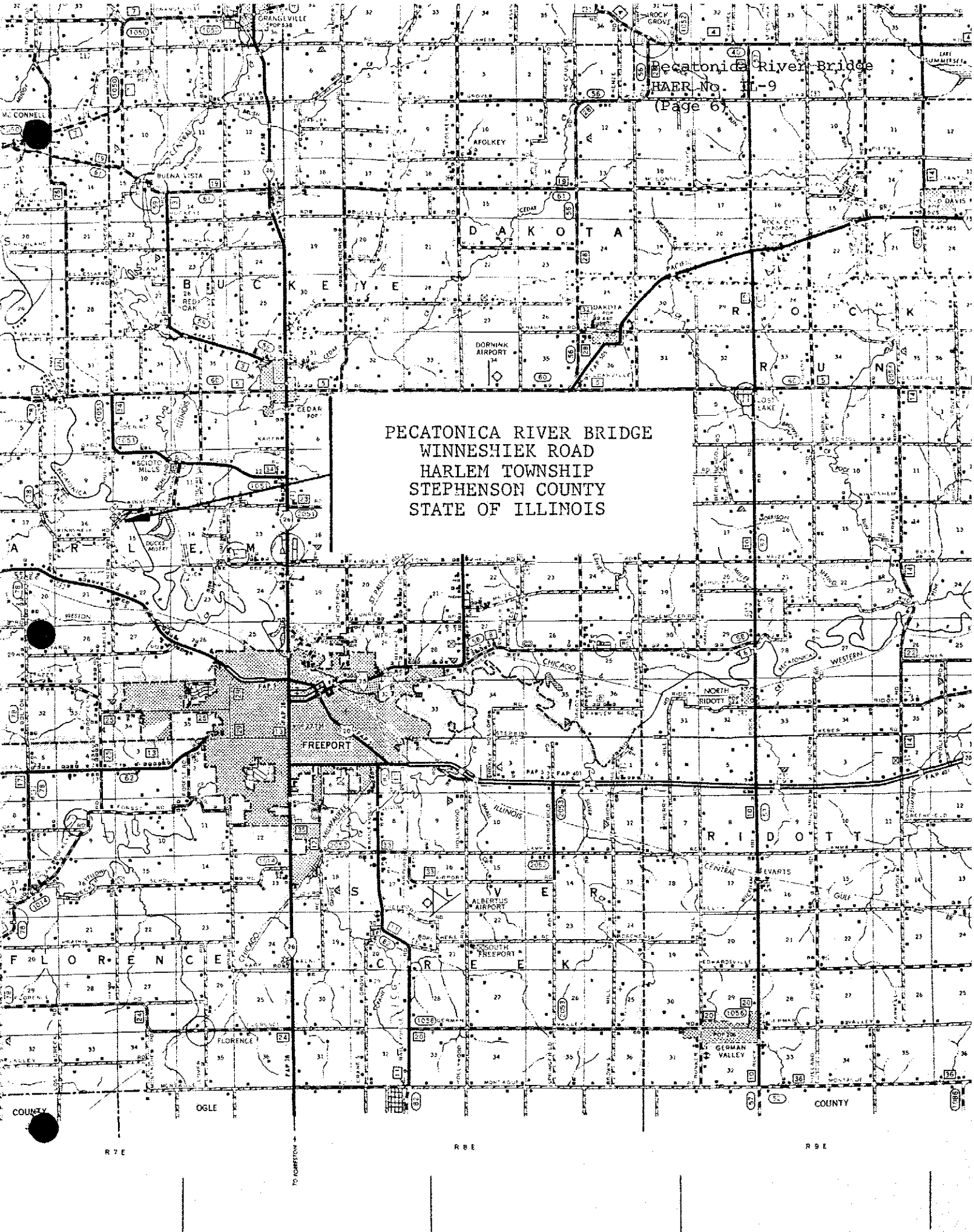
WROUGHT IRON BRIDGE COMPANY, CANTON, OHIO.



SINGLE INTERSECTION PRATT TRUSS.

THIS plan is designed for spans of 80 to 150 feet. It is the design now almost universally adopted for both Railway and Highway Bridges of moderate span.

PECATONICA RIVER BRIDGE
WINNESHIEK ROAD
HARLEM TOWNSHIP
STEPHENSON COUNTY
STATE OF ILLINOIS


PECATONICA RIVER BRIDGE
WINNESHIEK ROAD
HARLEM TOWNSHIP
STEPHENSON COUNTY
STATE OF ILLINOIS
FREEPORT
DAKOTA
BUCKEYE
ROCK RUN
HARLEM
FLORENCE
RIDOTT
SILVER CREEK
OGLE COUNTY
STEPHENSON COUNTY
R 7 E
R 8 E
R 9 E
89° 40'
89° 35'
89° 30'
89° 25'